

ERWIN UTILITIES

Erwin and Vicinity

2016 Water Quality Report

ERWIN UTILITIES is proud of the fine drinking water it provides. This annual water quality report shows the source of our water, lists the results of our tests, and contains much important information about water and health. ERWIN UTILITIES will notify you immediately if there is any reason for concern about our water. We are happy to show you how we have exceeded the water quality standards.

Recently, there has been a national focus on lead levels in drinking water. Erwin Utilities does not have any known lead service lines within the system. Most lead pipes in the United States were installed in the late 1800's. Erwin Utilities' earliest water mains were installed around 1910. Lead service lines were never used in Erwin's water system. This is a contributing factor to the low levels of lead found in Erwin Utilities' water system. Another factor is Erwin Utilities' strong corrosion control program that is in place at the water plants.

Erwin Utilities complies with all State and Federal rules on controlling copper and lead. There have been no water quality violations at any of Erwin Utilities' drinking water plants. Erwin Utilities' program involves pH control of the water during treatment, adding corrosion inhibitors at the treatment plant, and extensive monitoring to detect any signs of corrosion. Erwin Utilities has never had a problem with lead or copper levels in our drinking water. The action level for copper is 1.3 parts per million. In 2014, test results indicated a range of 0.049 to 0.42 parts per million, which is much lower than the action level. The action level for lead is 15 parts per billion. In 2014, sample results indicated that lead levels were below detection level (bdl) to 0.5 ppb, which is much less than the action level.

We are proud to report that the water provided by ERWIN UTILITIES meets or exceeds established water quality standards.

We encourage public interest and participation in our community's decisions affecting drinking water. Regular meetings of the Board of Public Utilities are held on the fourth Thursday of each month at the Erwin Utilities Building at 4:30 p.m. The public is welcome. Find out more about ERWIN UTILITIES on the Internet at www.e-u.cc.

Drinking Water Standards

Drinking water standards are regulations that the EPA sets to control the level of contaminants in the nation's drinking water. These standards are part of the Safe Drinking Water Act's "multiple barrier" approach to drinking water protection, which includes assessing and protecting drinking water sources; protecting wells and collection systems; making sure water is treated by qualified operators; ensuring the integrity of distribution systems; and making information available to the public on the quality of their drinking water. With the involvement of the EPA, states, tribes, drinking water utilities, communities, and citizens, these multiple barriers ensure that tap water in the United States and its territories is safe to drink. In most cases, the EPA delegates responsibility for implementing drinking water standards to states and tribes.

Wellhead Protection Area

Erwin Utilities has designated wellhead protection areas to help prevent contamination of the groundwater supply. The major aim of this program is to increase awareness of the threats of groundwater contamination and to encourage voluntary protection such as conservation measures and environmentally sound waste management. Groundwater may be contaminated by the improper use and disposal of pesticides, used oil, solvents, and other contaminants. Erwin Utilities encourages the use of approved disposal sites for the disposal of these potential contaminants. The public is requested to report any activities that may result in groundwater contamination to Erwin Utilities at (423) 743-1820.

Additional Educational Information

CROSS-CONNECTION EDUCATION

Over the next few months, the warm weather will bring people outdoors to work in their yards and gardens and begin getting swimming pools ready. Erwin Utilities would like to ensure that our customers are aware of the dangers associated with these activities. An ordinary garden hose is a common way to contaminate a water supply when the hose is submersed in any liquid or attached to certain devices used to spray pesticides or herbicides. This forms a cross-connection. A cross-connection is a situation where a possible source of contamination is directly linked to our public water system. If the end of your hose is connected to a chemical container, swimming pool or other contaminant during a water main break or fire, the substance can be siphoned back into the water system. This condition, known as back-siphonage, could cause a public health hazard. Devices are available to prevent this problem; however the best solution is to always be careful how you use your water hose. Please help us provide a safe supply of water to all of our customers. Remember; never place your water hose in anything you would not want to drink. For more information on cross-connections and how to protect against them, call our office at 423-743-1844.

Water Sources

In 2016 Erwin Utilities' Water Department distributed 549,430,000 gallons of water to our customers. Our water system is located within the Nolichucky watershed and is supplied by groundwater pumped from four separate locations, one spring and three wells. The wells are located in the Honaker Formation, which is composed of dolomite, limestone, and shale with interbedded layers of gravel. Our goal is to protect our water from contaminants, and we are working with the State to determine the vulnerability of our water sources for potential contamination. The Tennessee Department of Environment and Conservation (TDEC) has prepared a Source Water Assessment Program (SWAP) Report for the water sources serving this water system. The SWAP Report assesses the susceptibility of water sources for potential contamination. To ensure safe drinking water, all public water systems treat and routinely test their water. Water sources can be rated as reasonably susceptible, moderately susceptible, or slightly susceptible based on geologic factors and human activities in the vicinity of the water source. The Erwin Utilities Water System sources are rated as reasonably susceptible to potential contamination.

An explanation of Tennessee's Source Water Assessment Program, the Source Water Assessment summaries, susceptibility scorings, and the overall TDEC report to EPA can be viewed online at www.tn.gov/environment/article/wr-wq-source-water-assessment, or you may contact the water system to obtain copies of specific assessments.

An Explanation of the Water Quality Data Table

Maximum Contaminant Level or MCL: The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Maximum Contaminant Level Goal or MCLG: The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

The table shows the results of our water quality analyses. Every regulated contaminant that was detected in the water is listed here. The table contains the name of each substance, the highest level allowed by regulation (MCL), the ideal goals for public health (MCLG), the amount detected, the usual sources of such contamination, footnotes explaining our findings, and a key to units of measurement. The following definitions of MCL and MCLG are important.

WATER QUALITY DATA TABLE

Key To Table

Acronyms:

AL = Action Level, or the concentration of a contaminant which, when exceeded, triggers treatment or other requirements which a system must follow.

MRDL = Maximum Residual Disinfectant Level, or the highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for the control of microbial contaminants.

MRDLG = Maximum Residual Disinfectant Level Goal, or the level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

TT = Treatment Technique, or a required process intended to reduce the level of a contaminant in drinking water.

Units of Measure:

ppm or mg/L = parts per million or milligrams per liter, explained in terms of money as one penny in \$10,000

ppb or mcg/L = parts per billion or micrograms per liter, explained in terms of money as one penny in \$10,000,000

NTU = Nephelometric Turbidity Unit – Turbidity is a measure of the clarity of the water. Turbidity in excess of 5 NTUs is just noticeable to the average person.

bdl = below detection limit, a level that is below the lowest quantity of a substance that can be detected by a particular laboratory instrument.

| Contaminant | Date Tested | Unit | MCL | MCLG | Reported Level | Range | Major Sources | Violation |
|--------------------------------------|-----------------------------------|--------|--------|-------|--------------------|------------|--------------------------------------------------------------------------------------------------------------|-----------|
| Copper ³ | 09/10/14 | ppm | AL=1.3 | 1.3 | 0.39 ⁴ | 0.049-0.42 | Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives | NO |
| Fluoride | 1 per quarter in 2016 | ppm | 4 | 4 | 0.71 ⁵ | 0.59-0.71 | Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer factories | NO |
| Lead ² | 09/10/14 | ppb | AL=15 | 0 | 0.5 ⁴ | bdl-0.5 | Corrosion of household plumbing systems; Erosion of natural deposits | NO |
| Nitrate | 9/9/16 | ppm | 10 | 10 | 2.72 ⁵ | 0.71-2.72 | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits | NO |
| Sodium | 5/8/2015 | ppm | n/a | n/a | 8.7 ⁵ | 2.1-8.7 | n/a | NO |
| Turbidity ¹ | See note | NTU | TT | n/a | 0.03 ⁶ | 0.02-2.00 | Soil runoff | NO |
| Turbidity ² | See note | NTU | TT | n/a | 0.03 ⁶ | 0.02-0.21 | Soil runoff | NO |
| TTHMs (Total Trihalomethanes) | 8 per year in 2016 | ppb | 80 | n/a | 13.18 ⁶ | 1.02-14.30 | By-product of drinking water chlorination | NO |
| HAA5 (Haloacetic Acids) | 8 per year in 2016 | ppb | 60 | n/a | 1.96 ⁶ | bdl-3.13 | By-product of drinking water chlorination | NO |
| Total Coliform Bacteria | 10 per month from Jan to Mar 2016 | Sample | 1 | 0 | 0 | 0 | Naturally present in the environment | NO |
| Total Coliform Bacteria ⁷ | 10 per month from Apr to Dec 2016 | Sample | TT | 0 | 0 | 0 | Naturally present in the environment | NO |
| Contaminant | Date Tested | Unit | MRDL | MRDLG | Detected Level | Range | Major Sources | Violation |
| Chlorine | 10 per month in 2016 | ppm | 4 | 4 | 2.0 ⁶ | 0.8-2.6 | A chemical used as a disinfectant | NO |

Water Quality Table Footnotes

¹ Shows the results of tests on our finished water at Elks Water Plant.

² Shows the results of tests on our finished water at Birchfield, O'Brien, and Howard C. Brown Water Plants.

Turbidity, which is monitored continuously, is a measure of the cloudiness of the water and is an indicator of the effectiveness of the filtration system. We met the treatment technique for turbidity with 100% of monthly samples below the turbidity limit of 0.30 NTU for all four water plants.

³ During the most recent round of lead and copper testing, all thirty samples were below the action level.

⁴ 90th Percentile

⁵ Maximum Detected Level

⁶ Average Detected Level

⁷ New reporting guidelines effective April 1, 2016 under the Revised Total Coliform Rule, PWS 0400-45-01-41

Other Monitoring for Unregulated Contaminants

ERWIN UTILITIES also tested for twenty unregulated volatile organic contaminants. One unregulated contaminant, chloroform, was detected with an average of 1.02 ppb with a range of 0.81-1.35 ppb. Unregulated contaminants are those for which EPA has not yet established drinking water standards. The purpose of unregulated contaminant monitoring is to assist the EPA in determining the occurrence of these contaminants in drinking water and whether future regulation is warranted. For additional information call the Safe Drinking Water Hotline at (800) 426-4791.

Required Additional Health Information

In order to ensure that tap water is safe to drink, EPA and the Tennessee Department of Environment and Conservation prescribe regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at (800) 426-4791.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals, and in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- (A) Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- (B) Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- (C) Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
- (D) Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.
- (E) Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Erwin Utilities is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/lead.

Water System Security

Following the events of September 2001, we realize that our customers are concerned about the security of their drinking water. We urge the public to report any suspicious activities at any utility facilities, including treatment plants, tanks, fire hydrants, etc. to (423) 743-1820.

National Primary Drinking Water Regulation Compliance

ERWIN UTILITIES was in compliance with National Primary Drinking Water Regulations for calendar year 2016.

ERWIN UTILITIES is a member of: American Water Works Association, Tennessee Association of Utility Districts, and Water Environment Federation.

For more information about your drinking water and for opportunities to get involved, please contact Clay Hepburn, Water Treatment Supervisor, by calling (423) 735-4563 or by writing to this address: P. O. Box 817, Erwin, TN 37650-0817.

Erwin Utilities Board

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Este informe contiene informaci3n importante acerca de su agua potable. Haga que alguien lo traduzca para usted, o hable con alguien que lo entienda.